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Shinichi Inoue

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BIRCH STEWART KOLASCH & BIRCH
PO BOX 747
FALLS CHURCH, VA 22040-0747

EXAMINER

HEINCER, LIAM J

ART UNIT

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NOTIFICATION DATE

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ELECTRONIC

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DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 2 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schauder et al. (US Pat. 5,728,766) in view of Singha et al. (Journal of Applied Polymer Science, Vol. 68, 1647-1652, 1997) as evidenced by the declaration filed November 12, 2010.

Considering Claims 2 and 6: Schauder et al. teaches a rubber like article (6:30-40) comprising an ethylene-propylene copolymer (2:25-54) that has been molded and vulcanized (4:52-5:11). Schauder et al. teaches the copolymer as having a molecular weight distribution between 1 and 8 and a Mooney viscosity of 200 to 70,000 (4:19-27). As shown by the original specification, EPM rubbers having a Mooney viscosity 170 have a molecular weight of 600,000 and molecular weight increases as Mooney viscosity increases (pg. 4). As such, a polymer with a Mooney viscosity of 200 to 70,000 would have a molecular weight of greater than 830,000.

Schauder et al. does not teach ethylene-propylene copolymer as being a hydrogenated product of natural rubber. However, Singha et al. teaches hydrogenating a natural rubber/Hevea brasiliensis to a degree of hydrogenation of 100% (Table II) in the presence of a rhodium complex in

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a solvent (pg. 1652). Schauder et al. and Singha et al. are analogous art as they are concerned with the same field of endeavor, namely ethylene-propylene copolymers. It would have been obvious to a person having ordinary skill in the art at the time of invention to have used the hydrogenated rubber of Singha et al. as the ethylene-propylene polymer in the molded article of Schauder et al., and the motivation to do so would have been, as Singha et al. suggests, it is an easy method to produce ethylene-propylene copolymers (pg. 1647-48).

Singha et al. does not teach the hydrogenation as occurring in the state of latex. However, the instant claim is a product by process claim. “[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985) (citations omitted). See MPEP § 2113. As the original specification teaches that the latex and solvent embodiments are interchangeable, it is being assumed that the properties will be similar, absent evidence to the contrary.

Claims 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schauder et al. (US Pat. 5,728,766) in view of Singha et al. (Journal of Applied Polymer Science, Vol. 68, 1647-1652, 1997) as evidenced by the declaration filed November 12, 2010.

Considering Claim 7: Schauder et al. teaches a method for producing a rubber like article (6:30-40) comprising an ethylene-propylene copolymer (2:25-54) comprising molding and vulcanizing the article (4:52-5:11). Schauder et al. teaches the copolymer as having a molecular weight distribution between 1 and 8 and a Mooney viscosity of 200 to 70,000 (4:19-27). As shown by the original specification, EPM rubbers having a Mooney viscosity 170 have a molecular weight of 600,000 and molecular weight increases as Mooney viscosity increases (pg. 4). As such, a polymer with a Mooney viscosity of 200 to 70,000 would have a molecular weight of greater than 830,000.

Schauder et al. does not teach ethylene-propylene copolymer as being a hydrogenated product of natural rubber. However, Singha et al. teaches hydrogenating a natural rubber/*Hevea brasiliensis* to a degree of hydrogenation of 100% (Table II) in the presence of a rhodium complex in a solvent (pg. 1652). Schauder et al. and Singha et al. are analogous art as they are concerned with

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the same field of endeavor, namely ethylene-propylene copolymers. It would have been obvious to a person having ordinary skill in the art at the time of invention to have used the hydrogenated rubber of Singha et al. as the ethylene-propylene polymer in the molded article of Schauder et al., and the motivation to do so would have been, as Singha et al. suggests, it is an easy method to produce ethylene-propylene copolymers (pg. 1647-48).

Singha et al. does not teach the hydrogenation as occurring in the state of latex. However, the instant claim is a product by process claim. “[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985) (citations omitted). See MPEP § 2113. As the original specification teaches that the latex and solvent embodiments are interchangeable, it is being assumed that the properties will be similar, absent evidence to the contrary.

Claims 8 and 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schauder et al. (US Pat. 5,728,766) in view of Singha et al. (Journal of Applied Polymer Science, Vol. 68, 1647-1652, 1997) as evidenced by the declaration filed November 12, 2010.

Considering Claims 8 and 12-14: Schauder et al. teaches a rubber like article (6:30-40) comprising 70 to 95 weight percent of EPDM resin and 5 to 30 weight percent of an ethylene-propylene copolymer (2:25-54) that has been molded and vulcanized (4:52-5:11). Schauder et al. teaches the copolymer as having a molecular weight distribution between 1 and 8 and a Mooney viscosity of 200 to 70,000 (4:19-27). As shown by the original specification, EPM rubbers having a Mooney viscosity 170 have a molecular weight of 600,000 and molecular weight increases as Mooney viscosity increases (pg. 4). As such, a polymer with a Mooney viscosity of 200 to 70,000 would have a molecular weight of greater than 830,000.

Schauder et al. does not teach ethylene-propylene copolymer as being a hydrogenated product of natural rubber. However, Singha et al. teaches hydrogenating a natural rubber/*Hevea brasiliensis* to a degree of hydrogenation of 100% (Table II) in the presence of a rhodium complex in a solvent (pg. 1652). Schauder et al. and Singha et al. are analogous art as they are concerned with

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the same field of endeavor, namely ethylene-propylene copolymers. It would have been obvious to a person having ordinary skill in the art at the time of invention to have used the hydrogenated rubber of Singha et al. as the ethylene-propylene polymer in the molded article of Schauder et al., and the motivation to do so would have been, as Singha et al. suggests, it is an easy method to produce ethylene-propylene copolymers (pg. 1647-48).

Singha et al. does not teach the hydrogenation as occurring in the state of latex. However, the instant claim is a product by process claim. “[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985) (citations omitted). See MPEP § 2113. As the original specification teaches that the latex and solvent embodiments are interchangeable, it is being assumed that the properties will be similar, absent evidence to the contrary.

Claims 22-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schauder et al. (US Pat. 5,728,766) in view of Singha et al. (Journal of Applied Polymer Science, Vol. 68, 1647-1652, 1997) as evidenced by the declaration filed November 12, 2010.

Considering Claims 22-25: Schauder et al. teaches a rubber like article (6:30-40) comprising an ethylene-propylene copolymer (2:25-54) that has been molded and vulcanized (4:52-5:11). Schauder et al. teaches the copolymer as having a molecular weight distribution between 1 and 8 and a Mooney viscosity of 200 to 70,000 (4:19-27). As shown by the original specification, EPM rubbers having a Mooney viscosity 170 have a molecular weight of 600,000 and molecular weight increases as Mooney viscosity increases (pg. 4). As such, a polymer with a Mooney viscosity of 200 to 70,000 would have a molecular weight of greater than 830,000.

Schauder et al. does not teach ethylene-propylene copolymer as being a hydrogenated product of natural rubber. However, Singha et al. teaches hydrogenating a natural rubber/*Hevea brasiliensis* to a degree of hydrogenation of 100% (Table II) in the presence of a rhodium complex in a solvent (pg. 1652). Schauder et al. and Singha et al. are analogous art as they are concerned with the same field of endeavor, namely ethylene-propylene copolymers. It would have been obvious to

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a person having ordinary skill in the art at the time of invention to have used the hydrogenated rubber of Singha et al. as the ethylene-propylene polymer in the molded article of Schauder et al., and the motivation to do so would have been, as Singha et al. suggests, it is an easy method to produce ethylene-propylene copolymers (pg. 1647-48).

Singha et al. does not teach the hydrogenation as occurring in the state of latex. However, the instant claim is a product by process claim. “[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985) (citations omitted). See MPEP § 2113. As the original specification teaches that the latex and solvent embodiments are interchangeable, it is being assumed that the properties will be similar, absent evidence to the contrary.

Response to Arguments

Applicant's arguments filed November 12, 2010 have been fully considered but they are not persuasive, because:

A) The applicant's argument that Singha et al. does not teach a hydrogenated polyisoprenoid is not persuasive. The applicant requests specific citations to show that the reference teaches a hydrogenated natural polyisoprenoid. Singha et al. teaches the hydrogenation of natural rubber/*Hevea brasiliensis* (Title). The applicant appears to agree with this statement (pg. 6 of applicant's arguments). As the original specification teaches, natural rubber is a natural polyisoprenoid (pg. 3). Further the original specification describes the reference as teaching a hydrogenated natural rubber (pg. 4-5).

B) The applicant's argument the Singha et al. does not teach hydrogenating in a latex is not persuasive. Singha et al. does not teach the hydrogenation as occurring in the state of latex. However, the instant claim is a product by process claim. “[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art,

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the claim is unpatentable even though the prior product was made by a different process.” *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985) (citations omitted). See MPEP § 2113. As the original specification teaches that the latex and solvent embodiments are interchangeable, it is being assumed that the properties will be similar, absent evidence to the contrary.

C) The applicant’s argument there it would be difficult to make the proposed combination appears to misconstrue the instant rejection. Singha et al. teaches that their method is an alternative to conventional methods of producing ethylene-propylene polymers. Schauder et al. teaches a conventionally produced ethylene-propylene polymer. Therefore, a person having ordinary skill in the art at the time of invention would anticipate that the polymers could be used in similar applications, as Singha et al. teaches that their process an alternative method for making ethylene-propylene polymers. The final polymers would have substantially similar chemical structures. The selection of a known material based on its suitability for its intended use supported a *prima facie* obviousness determination in *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945). See MPEP 2144.07.

D) The applicant’s arguments that the claimed molecular weight would be non-obvious based on the teachings of Sasagawa, Reference Material 1, and Reference Material 2 is not persuasive. While these references teach poor processability at high molecular weights, the systems are materially different from the system of Schauder et al.. Schauder et al. teaches a blend of a high viscosity/molecular weight and low viscosity/molecular weight polymers that has good processability (4:7-35). Schauder et al. teaches one of the copolymers (the copolymer relied upon in the rejection) as having a Mooney viscosity of 200 to 70,000 (4:19-27). As shown by the original specification, EPM rubbers having a Mooney viscosity 170 have a molecular weight of 600,000 and molecular weight increases as Mooney viscosity increases (pg. 4). As such, a polymer with a Mooney viscosity of 200 to 70,000 would have a molecular weight of greater than 830,000.

E) The applicant’s argument of unexpected results is not persuasive. Any differences between the claimed invention and the prior art may be expected to result in some differences in properties. The issue is whether the properties differ to such an extent that the difference is really unexpected. *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). See MPEP §

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716.02. The applicant has not provided an explanation of objective evidence showing that claimed invention is unexpected compared the cited references. See MPEP § 716.02(b).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LIAM J. HEINCER whose telephone number is (571)270-3297. The examiner can normally be reached on Monday thru Friday 7:30 to 5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on 571-272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mark Eashoo/
Supervisory Patent Examiner, Art Unit 1767

LJH
December 3, 2010